Red Hat CloudForms 3.1 Management Engine 5.3 Release Notes

Summary of new features, corrections and known bugs for CloudForms Management Engine

CloudForms Documentation Team

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Abstract

This document is the release notes for CloudForms Management Engine and contains a summary of all new features, major corrections from the previous version, and any known bugs upon general availability. Information and procedures in this book are relevant to CloudForms Management Engine administrators.

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Chapter 1. About CloudForms Management Engine

CloudForms Management Engine delivers the insight, control, and automation enterprises need to address the challenges of managing virtual environments, which are far more complex than physical ones. This technology enables enterprises with existing virtual infrastructures to improve visibility and control, and those just starting virtualization deployments to build and operate a well-managed virtual infrastructure.

Red Hat CloudForms 3.1 is comprised of a single component, the CloudForms Management Engine. It has the following feature sets:

- Insight: Discovery, Monitoring, Utilization, Performance, Reporting, Analytics, Chargeback, and Trending.
- Control: Security, Compliance, Alerting, Policy-Based Resource and Configuration Management.
- Automate: IT Process, Task and Event, Provisioning, Workload Management and Orchestration.
- Integrate: Systems Management, Tools and Processes, Event Consoles, CMDB, RBA, and Web Services.

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If you have a suggestion for improving the documentation, try to be as specific as possible when describing it. If you have found an error, please include the section number and some of the surrounding text so we can find it easily.

Chapter 2. Support Matrix

Table 2.1. Browser Versions for CFME Web Console

Browser	Version
Microsoft Internet Explorer	8 and over
Mozilla Firefox	Firefox Extended Support Release FAQ
Google Chrome	Chrome for Business FAQ - Chrome for Business Help

Table 2.2. System SmartState Analysis Support by Guest Operating System

Guest Operating System	Support Status
Windows 2008	X
Windows XP	X
Windows 2000	X
Windows Vista	X
Windows Server 2003	X
Windows 7	X
Red Hat Enterprise Linux 6	X
Fedora	X
Debian and Debian Derived	X
Ubuntu and Ubuntu Derived	X
Suse and Open Suse Derived	X

Table 2.3. SmartState Analysis Support by Guest File System

File System	Support Status
Ext3	X
Ext4	X
FAT32	X
ISO9660 (CDFS)	X
NTFS	X
XFS	X

Table 2.4. SmartState Analysis Support by Provider

Provider	Support Status
VMware vCenter 4.x	Technical Guidance (see Important note below)
VMware vCenter 5.0	X
VMware vCenter 5.1	X
VMware vCenter 5.5	X
Red Hat RHEV-M 3.2 and below	Technical Guidance (see Important note below)
Red Hat RHEV-M 3.3	X
Red Hat RHEV-M 3.4	X

Important

Technical Guidance, if available, is provided from the end of the General Support phase and lasts for a fixed duration. This phase is intended for use by customers operating in stable environments with systems that are operating under reasonably stable loads.

Table 2.5. Infrastructure Providers Where the CFME Appliance Can Reside

Provider	Support Status
VMware vCenter 5.0 and above	X
Red Hat RHEV-M 3.3 and above	X
Red Hat OpenStack 4.0 and above	X

CloudForms Management Engine is delivered as a virtual appliance, composed of RHEL 6.6, PostgreSQL 9.2.8, and CFME 5.4.x.

Note

- See also Cloudforms Support for non-Red Hat Virtual and Cloud Infrastructures.
- See Red Hat Enterprise Virtualization Life Cycle and VMware Lifecycle Product Matrix for product life cycle information.

Table 2.6. Support by Feature

	Provider			Private Cloud	Public Cloud
Feature	VMware vCenter	RHEV	MS SCVMM* 2012 R2	RHEL OpenStack Platform	Amazon EC2
Relationship discovery	Yes	Yes	Yes	Yes	Yes
VM Drift Comparison	Yes	Yes	No	Some	Some
VM Analysis	Yes	Yes	Some	No	Some
Track VM Genealogy	Yes	Yes	No	Yes	Yes
Capacity & Utilization	Yes	Yes	No	Some	Some
Capture Infrastructure Event Timelines	Yes	Yes	No	N/A	N/A
Capture Cloud Layer Timelines	N/A	N/A	N/A	Yes	N/A

	Provider			Private Cloud	Public Cloud
Capture VM/Instance Event Timelines	Yes	Yes	No	Yes	N/A
Discovery - Provider	Yes	Yes	No	Yes	N/A
Host Drift Comparison	Yes	Yes	No	N/A	N/A
Optimization - Bottleneck Identification	Yes	Yes	No	N/A	N/A
Reporting	Yes	Yes	Yes	Yes	Some
Right Sizing	Yes	Yes	No	No	No
Chargeback	Yes	Yes	No	Yes	Yes
Insight Integrate Web Service	Yes	Yes	No	Yes	Yes
Host Compliance Enforcement	Yes	Yes	No	N/A	N/A
Host Policy Enforcement	Yes	Yes	No	N/A	N/A
Host Power Operations	Yes	No	No	N/A	N/A
Remote Console VM Access	Yes	No	No	No	No
Snapshot Creation and Removal	Yes	No	No	N/A	N/A
VM Cloning	Yes	No	No	N/A	N/A
VM / Instance Compliance Enforcement	Yes	Yes	No	No	Yes
VM / Instance Policy Enforcement	Yes	Yes	No	No	Yes
VM / Instance Power Operations	Yes	Yes	Yes	Yes	Yes
VM / Instance Retirement	Yes	Yes	No	Yes	Yes
Alerts - Real Time	Yes	No	No	Some	No
Alerts - VMware Alarms	Yes	N/A	N/A	N/A	N/A
Alerts - VM Value Changed	Yes	No	No	No	No

	Provider			Private Cloud	Public Cloud
Alerts - Reconfigured	Yes	No	No	No	No
Control Integrate Web Service	Yes	Yes	No	Yes	Yes
Provisioning Host	Yes	No	No	N/A	N/A
Integrate with Service Catalogs	Yes	Yes	No	Yes	Yes
Provisioning VM / Instance using PXE	Yes	Yes	No	No	N/A
Provisioning VM / instance using ISO	No	Yes	No	No	N/A
Provisioning VM / Instance using Cloning	Yes	Yes	No	N/A	N/A
Virtual Machine Reconfiguration	Yes	No	No	Via Inline methods	No
VM Migration	Yes	No	No	Via Inline methods	No
Automation Work Flows	Yes	Yes	No	Yes	Some
Automate Integrate Web Service (Provision)	Yes	Yes	No	Yes	Yes
Remote Execution	Yes	Yes	Yes		Yes

* Support for Microsoft SCVMM 2012 R2 is in Technical Preview. See Technology Preview Features Support Scope.

Table 2.7. VMware Remote Console (VMRC) Support

VMware Version	Browser
vSphere 5.1	Internet Explorer 8, 9, 10
vSphere 5.1	Firefox 23, 26
vSphere 5.1	Chrome 34
vSphere 5.5	Internet Explorer 8, 9, 10
vSphere 5.5	Firefox 25, 27, 28
vSphere 5.5	Chrome 34

CloudForms Management Engine supports the versions of VMRC that are supported by VMware. Note that VMware does not support VMRC for Mac Operating Systems.

For operating systems without VMRC support, use VNC. The following have been tested with CloudForms Management Engine:

Operating System	Browser
Mac OS	Chrome, version 32 or lower Safari, latest Firefox, latest

Chapter 3. Enhancements

OpenShift 2 Installer (Tech Preview)

CloudForms Management Engine - Errata 5.3.2 provides the functionality to deploy Red Hat OpenShift Enterprise 2 into any supported Red Hat CloudForms provider infrastructure. The support for the functionality is limited to TECHNICAL PREVIEW.

REST API Integration

CloudForms Management Engine now offers a REST API that supports Service Management and Insight capabilities:

- Can be used with Basic and Token-based Authentication
- Insight management includes queries, paging, sorting and filtering.
- Can be used for Insight queries of over 20 resource types including Service Catalog, Providers, Vms/Instances, Templates/Images.
- Service Ordering and Retirement
- Tag management

For more information, see the *CloudForms Management Engine 5.3 Integration Guide*.

Configuration

Open LDAP can be used for authentication.

OpenStack Enhanced Integration

Red Hat CloudForms now supports the following OpenStack features:

- RabbitMQ as messaging system
- Ability to gather information from Glance (image storage), Cinder (block storage), and Neutron (networking) Services.
- Information about both tenants and users are collected from the Keystone Service.

Automate

The Automate model is now provided as a read-only domain. Instead, additional writable domains can be created, enabled, disabled, and prioritized to control the automate resolution process.

The Automate Explorer allows copying items from the read-only domain to writable domains for user customization.

Provisioning

Regular expressions can be used in Service Dialog text boxes.

Support has been added for Red Hat Enterprise Virtualization Manager 3.3 cloud-init.

Support for Microsoft SCVMM (Tech Preview)

Providers can be auto-discovered.

Datastore Cluster, and relationships can be viewed.

Power operations are supported.

Integration Points

IPA Integration

- IPA-Server based Single-Sign on using the new External (httpd) Authentication Mode has been enabled.
- A new Appliance Console menu item has been provided to simplify configuration and enablement of External Authentication.

Enhanced Key Management

A new key management system improves security on CFME appliances across all CFME regions.

When configuring a database in the terminal, you are prompted to create or fetch a key.

- If this is the first CFME appliance, select the option to create a key.
- If this is not the first CFME appliance, select the option to fetch the key from the first CFME appliance. All CFME appliances in a multi-region deployment must use the same key.

CFME stores the key in **`/var/www/miq/vmdb/certs/v2_key`**. If a key already exists, creation of a new key fails.

Savon Update

CloudForms Management Engine now uses Savon 2.2.0. This is compatible with the WinRM gem, and is a dependency of several gems in the CFME Gemfile.

Single Sign-On Authentication (Red Hat CloudForms 3.1.1)

CloudForms Management Engine now supports Single Sign On using Kerberos tickets.

Documentation Updates

Integration Guide has been updated with REST API content.

User Guide for non-administrative users is now available.

A NetApp Storage Integration Guide is now available.

Chapter 4. Major Corrections

The following major bugs were addressed in the CloudForms Management Engine 5.3.0 update.

BZ#1054901

When provisioning a large number of virtual machines with Red Hat Enterprise Virtualization 3.2, some machines were created but not powered on due to request timeout errors. Timeout support for RHEV-M API calls have been added to the CFME appliance. Virtual machines now power on successfully.

BZ#1110244

When the user navigated to Cloud Intelligence -> Reports -> Import/Export then clicked on the Export button without first selecting a report to view, they received an error. This was because the Export button was available to the user before they chose a report.

Now, the export button is disabled and unavailable to the user, but becomes available once they select a report from the "Available Reports" list.

BZ#1114756

In the older version of Cloud Forms Management Engine, the administrator was not able to save a script as a component of a new customization template under the PXE option of the Infrastructure main menu. This was fixed by adding a missing variable in the customization template code. The customization template script can now be saved as expected.

BZ#1117500

Previously, navigating to Cloud -> Instances -> Lifecycle -> Provision Instance and choosing a Ec2 east template returned an error. This was because of a missing provisioning route in VM controller files.

The problem has been fixed in four controller files and the error no longer appears.

BZ#1119402

Previously, a routing error occurred when provisioning cloud instances:

Action not implemented [vm_cloud/pre_prov]

Now, this issue has been fixed, and the error no longer occurs.

BZ#1122712

In the previous version of CloudForms Management Engine, attempting to clone a template resulted in the error "Migrate doesn't apply to templates". This was due to the wrong method being used for cloning the template. This bug was fixed by adding a new method to enable cloning of templates. Cloning templates now works as expected.

BZ#1132708

In the older version of Cloud Forms Management Engine, a fatal error was encountered when attempting to edit ISO image meta data in the ISO datastore for PXE controllers. This was fixed by adding in missing route information for editing ISO image metadata. ISO image metadata can now be edited as expected.

BZ#1134053

When provisioning a virtual machine, action changes were not reflected. This bug fix updates vm_infra controller with sort_iso_img_grid so that the routing error no longer returns.

BZ#1142875

Previously, adding a Control Policy would fail with exception due a flaw in the paging_controls_url method. This has now been removed and two new methods have been added for adding and updating URL query string parameters so that adding a Control Policy works as expected.

BZ#1026415

After taking a snapshot of a virtual machine with the memory snapshot option enabled, the virtual machine shuts down when the snapshot is reverted to. The code has been updated to include the memory parameter when taking a snapshot. The virtual machine will now be in the state it was when the snapshot was taken.

BZ#1030209

Provisioning OpenStack instances with multiple tenant networks available resulted in an error: "Multiple possible networks found, use a Network ID to be more specific." This fix adds a dialog to select the tenant network when multiple tenant networks are available. The user now selects the tenant network for their OpenStack instances.

BZ#1052924

Clicking the update button in the CFME appliance successfully registered and subscribed to the Satellite 5 server but failed to update due to yum not importing RPM GPG keys automatically from within the worker context. The keys are now imported prior to

running the yum command, and the update succeeds.

BZ#1087637

The error is caused due to Automate generating incorrect XML. The CPU definition contained the unrecognised elements 'sockets'and 'cores' which are attributes of the topology element. Hence, after upgrading RHEVm from 3.3 to 3.4, the user cannot provision new VMs from CloudForms Management Engine. The RHEVm log contains the error 'unexpected element (uri:"", local:"sockets")'.
A number of fixes were incorporated to ensure that the CPU definition is generated correctly.
The user is now able to provision new VMs from CFME.

BZ#1121202

The vmdb/public/assets directory did not exist on product appliance builds during development stages of CFME 5.3.0. The build process was changed to precompile the assets and make them available as a part of the source tarball used to build CFME. The assets directory is now available as expected.

BZ#1058915

When connecting to a virtual machine from Red Hat CloudForms EVM using the latest version of VMRC, the process failed to complete, resulting in issues like the console button being rendered unusable, or error messages such as the VMRC plugin not being installed or that the feature is only available in Firefox or Internet Explorer. The two major issues were that EVM was using previously installed versions of VMRC rather than the most updated ones and that EVM, in some cases, was incorrectly detecting Internet Explorer 11 as Firefox and providing wrong paths. These issues have been fixed in the most recent version. Connecting to a virtual machine from Red Hat CloudForms EVM should work correctly.

BZ#1060315

Previously, browsing the 5.2.1.8 user interface using an Internet Explorer 8 browser resulted in an "Error 403 Forbidden Page" error. Internet Explorer does not set a page referer by default when using the page.redirect_to method. This fix sets the referer via javascript when page.redirect_to is called and redirects to the correct URL.

BZ#1077355

Starting a console session using the VMRC 5.1 plugin console access only worked with a Firefox 27 browser, but failed on Internet Explorer 10, 11, and Chrome 19 with an error message.

Error message: Remote Console plugin is not properly installed

VMRC plugin version 5.1 was enabled in Internet Explorer and Chrome and a console session now starts correctly.

BZ#1083397

In the older version of Cloud Forms Management Engine, adding or editing a service catalog resulted in an undefined method error. This was due to a coding error resulting from a change in the library handling dynamic trees. This bug was fixed by correcting the coding errors, allowing users to add or edit a service catalog as expected.

BZ#1098497

IE8 LDAP group switching led to 403 forbidden error in Win7/IE8. IE8 403 forbidden errors have now been fixed such as logging in (dried), changing LDAP groups and adding, removing, resetting dashboard widgets. There is no more redirect to 403 forbidden page on group switching, thus the issue has been fixed.

BZ#1103341

In the previous version of CloudForms Management Engine, the user had to press and hold the mouse button when selecting a listed group to change their role. This made changing roles needlessly difficult. This was due to a bug in the Java script code that handled role selection. It was fixed by correcting the Java script code. The user is now able to select a role without having to press and hold the mouse button.

BZ#1111746

When resizing a column width in the list view, an routing error returned. This bug fix adds routing for 'save_col_widths' in the FlavorController and also checked in all other controllers so that this routing error is no longer returned.

BZ#1120096

Previously, the web based VMRC console was having issues with different browsers. As a result, the VMRC console button was disabled in Google Chrome, and both Firefox and Internet Explorer were displaying a "Action not implemented" error.

Now, the VMRC connectivity issues have been fixed by adding a missing route, and the VMRC screen launches as expected.

BZ#1057396

When users belonging to more than one LDAP group attempted switching from one group to another via the CFME user interface, the user interface either denied access or resulted in a white screen. An HTTP referer check has been implemented to check for privileges and the session referer is now saved when a user switches groups. The user switching groups should now see the dashboard for the target user group.

BZ#1075251

There was a bug in matching the user's 'subscription types' attribute value to the preset values, resulting in an undefined method error when trying to register through the GUI on the Red Hat Updates tab. When editing user registration on the Red Hat Updates tab, the user is presented with an 'undefined method '+' for nil:NilClass' error. The user was not able to complete registration. The fix was implemented by changing symbol matching to strings matching against the SUBSCRIPTION_TYPES constant value. The user is now able to complete registration successfully.

BZ#1128873

A typo in the admin role features list code resulted in the evmgroup-administrator role not having access to the Automate Customization page. The typo has been corrected, and the role now has appropriate access.

BZ#1129495

This update fixes an issue with editing a previously created Catalog Item for VMware using the provision type of PXE due to a missing route. This caused errors when trying to edit a Catalog Item for VMware when using the provision type of PXE. A route has been added for sorting PXE grids. This means that Catalog Items for VMware when using the provision type of PXE can now be edited.

BZ#1131566

This update fixes an issue where clicking on nodes in the VM Genealogy Tree causes a routing error. Routes have now been added to allow clicking on nodes in the VM Genealogy Tree. This means that the information for the node in the VM Genealogy Tree can now be viewed.

BZ#1131696

In the older version of Cloud Forms Management Engine, when using Selected Infrastructure Providers as assignment, clicking the save button reset the assignment user interface leading the customer to believe that the rates have not been assigned. This issue is fixed in the latest version. Now the values are assigned correctly.

BZ#1133103

In the older version of Cloud Forms Management Engine, when a checkbox field was marked as required in the service dialog editor, the required attribute would not persist after exiting from the editor. This was fixed by changing the service dialog editor code to ensure that the required attribute would be saved to the database. Additional fixes were made to ensure that the backend code handled the checkbox state correctly depending on whether the checkbox was clicked or not in the User Interface.

BZ#1052069

Group filters were not taking effect on group dashboards, allowing users to see information that should not be visible to the group. userids were not being passed in the rbac.search method call when widgets were being rendered for groups. This fix allows userids to always pass to the widget regardless of group or user.

BZ#1079887

The virtual machines configuration management report was querying the incorrect data field when looking up the number of available vCPUs in a virtual machine. This meant that the Cloud Forms Management Engine was not reporting the number of vCPUs correctly when integrated with the Red Hat Enterprise Virtualization product. The virtual machines configuration management report was changed to query the correct data field. Additional changes were also made to ensure that accurate data is available in this field. The number of vCPUs are now reported correctly in the virtual machines configuration management report.

BZ#1087476

In the beta version of CloudForms Management Engine 5.3, if an infrastructure provider was removed, then added again, the relationships between the provider and its clusters and hosts were not refreshed. This was because, the old provider information was not deleted from host records when the provider was deleted. When the same infrastructure provider was added back and a refresh was initiated, the hosts could not resolve provider information and got an object not found error. This bug was fixed by nullifying the provider information on hosts when deleting the provider. Now, when the provider is added back, the hosts look up provider information as expected.

BZ#1117972

In a RHOSP-4 environment, when issuing a "Refresh Relationships and Power states" to collect instances, images etc, there was an error in the evm log without getting relationship information. This was because the server was using a flavor that is not public. Once access to a flavor has been restricted, no other projects besides the ones granted explicit access will be able to see the

flavor, including the admin project.

Code has been updated to fix the issue with private flavors not being visible on refresh.

BZ#1118902

The UI was inaccessible within minutes after adding a RHOS provider to the CFME appliance.

Ensuring the PID file exists within the watchdog_spec.rb and watchdog.rb files means that the UI is now still accessible after adding a RHOS provider.

BZ#1038653

When CFME is used to request the creation of a virtual machine, creates the virtual machine instance but throws an error message, leading users to believe that the virtual machine was not created. This was caused by the state machine running post_create_destination twice. The initial one succeeds and the second one fails because it had already created the virtual machine. post_install_callback has been changed to only run the method once. Virtual machines should now be created without any errors.

BZ#1045062

Deploying multiple virtual machines failed with the following message:

"RhevmApiError: Failed updating the properties of the VM. This may be caused either by:
1. The values selected are not appropriate for the VM; or
2. Its values cannot be updated while the VM is in UP state (Please shut down the VM in order to modify properties such as CPU or cluster)."

This was caused by RHEV-M returning a state of "complete" in the creation_status URL, leading to a request being made to the RHEV API to change a value on the virtual machine, but the virtual machine's URL was still reporting a state of "image_locked". A test has been added to to detect and re-queue the modification request if the destination image is in a state of "image_locked". The virtual machines now deploy successfully.

BZ#1058450

During the migration of VMware virtual machines, a type error caused the migration to fail with a UI error. This was caused by a refactor of the allowed_ci method in vm_migrate_workflow, which required sub-classed models to override and pass a list of sources. The call has been fixed, and virtual machine migration succeeds.

BZ#1068705

The correct workflow subclass was not loaded when provisioning a virtual machine from ISO images using automate, causing eligible customization templates to be unavailable. The provisioning workflow has been updated to accept object or ids for templates. Additionally, the provisioning workflow was also changed to load the subclassed workflow instance based on the source template type. All eligible customization templates are now visible when provisioning an instance.

BZ#1073689

The CloudInit customization template had an incorrect filename which resulted in the error when querying for the list of customization templates. Trying to query available customization templates from an automate script method while provisioning a cloud image resulted in an 'uninitialized constant' error. This fix was implemented by correcting the filename of CloudInit customization template service model. The automate script is now able to query for customized templates correctly.

BZ#1085104

The state_machine gem used in the vm_scanning method created a database transaction block when processing states as automate was coded to not allow methods to run inside of a database transaction. This caused an SQL error when trying to execute an automation request. Calling asynchronous raise_synthetic_event methods for automate tasks from policies has been fixed, which circumvents the database transaction block issue.

BZ#1028229

Failure to uncompress parameter ids before running find caused an error when a user clicked on a non-VM file while browsing the datastore. The .find call has been fixed to uncompress the ids and non-VM files now work as expected when clicked.

BZ#1034477

Services sub-tabs could not be individually enabled. In order to view one sub-tab a user have to be granted full permissions for the Services tab. The feature check for the Services tab has been updated to enable permissions for individual sub-tabs.

BZ#1035028

Users with limited permissions received a blank page when attempting to view items in the Virtual Machines sub-tab under the Infrastructure tab. The feature check for the Virtual Machines sub-tab has been updated to enable users with limited access to view permitted features.

BZ#1061482

In the older version of Cloud Forms Management Engine, generating a PDF from the Infrastructure or Providers pages resulted in an user interface error. This was due to missing information critical for generating the PDFs. This bug was fixed by adding in the missing information required for generating the PDFs. PDFs can now be generated as expected from the Infrastructure or Providers pages.

BZ#1081342

In the older version of Cloud Forms Management Engine, if the end user had Infrastructure access he automatically had PXE configuration access. To resolve this, additional role based access control was added to allow restricted access to PXE configuration. The administrator is now able control a user's access to PXE configuration as required.

BZ#1083622

When switching between groups, instead of the default page assigned to the user, dashboard defaults even when the user does not have access rights.

Fixed code to redirect user to a screen that they have access to when user switches between groups. Moved code that sets start page url into its own common method so it can be used when switching between groups and when user first logs in. Also, added spec test for "start_url_for_user" method to ensure it returns correct url when switching between user's group which has fixed the issue.

BZ#1092716

When an OpenStack instance has multiple security groups assigned, the Red Hat CloudForms web UI for that instance detail only has reference to one of the security groups the instance is assigned to. The security groups themselves seem to display this relationship accurately in that all VMs that have a security group assigned are seen, but not from the instance detail.

Fixed link to Security Groups to show the list of security groups. Thereby, the Red Hat CloudForms webUI now displays all the security groups on the instance summary page, so the issue is fixed.

BZ#1093178

On template summary screen, the analysis history value is clickable, but upon clicking throwed an error: "Error caught: [NoMethodError] undefined method 'id' for nil:NilClass".

Fixed calls to identify_record to pass in db as VmOrTemplate, default db being used was "self.class.model" which was VmInfra and was incorrect when user is on a template summary screen. This has now fixed the issue and there is no error reported.

BZ#1094451

In the beta version of CloudForms Management Engine 5.3, adding a Red Hat Open Stack provider failed with an undefined method error message. This error was a result of incorrect handling of the value provided for the port number field. This bug was fixed by correcting the code to handle the port number value correctly. The user is now able to add a Red Hat OpenStack provider as expected.

BZ#1097692

In the beta version of CloudForms Management Engine 5.3, if the administrator attempted to create a catalog under the services menu, it resulted in a fatal error stating that the user was not authorized for the task. This was because the role based access control rule to permit the administrator to create the catalog was missing. This bug was fixed by adding the missing role based access control rule. The administrator is now able to create catalogs as expected.

BZ#1098112

In the beta version of Cloud Forms Management Engine 5.3, it was not possible to modify the paginator value when listing virtual machines through their relationships with other objects. This was because the paginator did not handle list value updates in these views. This bug was fixed by enabling the handler for per-page setting and sorting of records in relationship views. The paginator now works as expected in relationship views.

BZ#1114747

Attempting to create an instance in automate, threw an error: WARN -- : Session::DalliStore#set: Value too large, memcached can only store 1048576 bytes per key [key: MIQ:VMDB:86346c9e21029126785058ecd92202e6, size: 1126745].

Changed code to add/edit instance to not store AR Objects in @edit, but, to store the required fields into array of hashes instead. Besides, some minor cleanups were also made to methods. These changes has fixed the issue and now there is no error.

BZ#1115717

Self service users are able to order catalog items only if they clicked "Order" versus clicking on the item and then clicking "Order". This was attributed to the issue where logged in user didn't have access to :sandt_tree.

Fixed code to pass in correct tree name to x_build_node_id method which has fixed the issue and self service users can now order a service without viewing catalog items.

BZ#1126364

A new user assigned the User role received an error message when attempting to provision a cloud instance or vm: "The user is not authorized for this task or item". Access to view the Request list and copy/delete has been added to the User role. In addition, a user will now be redirected back to the page where they initiated a Provisioning request if they don't have access to view the list of Requests to prevent errors in the UI.

BZ#1129802

Need to copy Automate class/instance/method elements in the same domain with a new name.

Code was updated to add support to be able to copy a single automate Class/Instance/Method with a new name under same domain. Made model changes to copy methods to call appropriate method when copying objects. Also, added new name text field on copy form that is only displayed when a single object is selected to copy and under a same domain. And, added a read only field "From Domain" to show users which domain they are copying object from. Changed label "Domain" on Domain pull-down to "to Domain".

BZ#1138858

When attempting to provision a VM on SCVMM, user is able to select a template and then receives an error "uninitialized constant MiqProvisionMicrosoftWorkflow [vm_infra/pre_prov]"

Disabled provisioning button for SCVMM. Added code around Publish button to be disabled for SCVMM on VM summary screen and also code around Publish button on list view to display a flash message "Publish does not apply to VM Template" when SCVMM VM is selected from a list view.

BZ#1119453

Previously, turning on replication on the Regional Database caused the backlog to grow indefinitely. As a consequence, replicating to Master database was unresponsive for a long period of time and timed out. With this update, the bug has been fixed and Regional Database replication now works as expected.

BZ#1004894

With a large number of events in the event queue, the delete event for hosts, clusters, or management systems timed out due to a dead lock. This meant that the user was unable to remove hosts,

clusters, or management systems within the Cloud Forms Management Engine environment. Changes were made so that the purger component would handle all events. The user is now able to remove hosts, clusters, and management systems within the Cloud Forms Management Engine environment.

BZ#1098648

The CFME appliance has two swap utilization thresholds to protect the operation of the appliance, at 60% and 80%. A bug got intorduced in these thresholds when the worker management code was refactored to fix another bugzilla. While the 80% swap utilization threshold was recognized, neither the 60% nor the 80% thresholds were honored.
This bug was fixed by re-enabling the check for swap space when starting workers.
As a result of this fix, the swap utilization thresholds are now honored correctly.

BZ#1126071

In the previous version of CloudForms Management Engine, the smart proxy executable was not uploaded to the appliance during start-up. This was due to the presence of a newline at the end of the VERSION file. The newline caused the comparison of the rpm version with the version provided by the smart proxy executable to fail, resulting in the failed upload. This bug was fixed by adding code to strip off any leading or trailing white space from the VERSION file. The smart proxy executable is now available in the appliance as expected.

BZ#1135044

After a copy of a certain built-in CFME Class from the ManageIQ domain into a custom domain, certain characters were replaced with html safe versions causing exceptions during StateMachine running. This was being caused by the haml-4.0.3 gem altering the passed in parameters when escaping the text_field_tag value. Code was updated in a way that escape_once works on frozen strings, that way it works the same way as #html_escape. This has now fixed the issue.

BZ#1135050

In the beta version of CloudForms Management Engine 5.3, running the rake command to precompile assets failed with the error asset logical path has no extension, for a file named without an extension. This was because the precompiler could not work with a filename without an extension. The bug was resolved by excluding files without extensions from precompiling. Precompiling assets now works as expected.

BZ#1122253

The Smart Management Tag window was missing from the Security Groups Summary page.
Code has been updated and the Smart Management Tag window has been added to the Security Group Summary page and the issue is now resolved.

BZ#1018214

Setting valid Remote Login credentials for an ESX host then attempting to validate the credentials in the Default Credentials section caused a "No credentials defined" error. The only way to add credentials for an ESX host was to use the default credentials of root, which required ssh login as root to be setup on ESX. This presents security risks. A clean up of auth_cache and related callbacks in the authentication mixin fixes the issue and users are now able to save login information.

BZ#1054382

An error in the miq_widget code caused dashboard widgets not to update for users who were members of multiple LDAP groups. The widget code has been fixed, and widget content now updates correctly when multi-group users log in or switch their group contexts.

BZ#1071360

For users who were member of multiple LDAP groups, dashboard widget 'Guest OS Information' regeneration failed with an Error status. Also, "Virtual Infrastructure Platforms" and "Vendor and Guest OS Chart" were stuck at "Running" status with an error message on web UI, "Widget Generation for 5 of 2 groups Complete".

The Widget.get_group method has been updated to work with both group ID and description, and time out of active and creating miq_tasks when queuing the widget generation have been fixed. Dashboard widgets can now be successfully (re)generated for multi-group users.

BZ#1072082

Adding a nil virtual column to a report resulted in failure to run the report. This was fixed by adding a test case for a nil virtual column, and reports containing a nil virtual column can now be run successfully.

BZ#1080231

User was unable to save "Remote Login" credentials for hypervisors with an error displayed on the user interface.

Error: "Default User ID must be entered if a Remote Login or Web Services User ID is entered"

With a clean up of auth_cache and related callbacks in authentication mixin the issue has been fixed and remote login information can now be saved.

BZ#1100597

When EVM generated SQL to run a report, it did not qualify a column name with a table name, resulting in an ambigious column reference error.
Hence, EVM was not able to run the report, and returned an incorrectly formed SQL error.
To fix this issue the associations for the fields utilized in the report were corrected so that the table name is correctly inserted in the SQL query.
User is now able to run the report without any failures.

BZ#1072494

When objects were passed to automate with a URL it instantiated the base_class model which ignored subclasses and methods exposed through subclassed service models. This meant that subclass methods were not available to automate scripts. Bugs in method overriding and association while loading the correct subclass when instantiating a service model were fixed and subclass methods are now available to automate scripts.

BZ#1077859

When a user received the below links (vm_or_template, miq_request) via email they could no longer browse to a service / request page without having to manually navigate to the request queue and clicking on their request.
Logging into the CFME as an Admin and accessing the following URLs links resulted in a blank page:
https://10.3.76.102/vm_or_template/show/619000000000068 and/or
https://10.3.76.102/miq_request/show/619000000000079

White listing of entry points was implemented to the web UI which has fixed the issue. Upon clicking a service/request URL via email, user now gets to the desired correct page.

BZ#1091962

Certain browsers limit the size of the cookie field in the HTTP header. This used to lead to bad requests after navigating through a large number of pages, as the Cookie field of the HTTP header used to get filled up with cookies storing state information on the tree branches navigated to earlier. This was fixed by limiting the maximum size of cookies, so that cookies do not grow larger then the maximum size expected by browsers.

BZ#1102822

In Cloud > Reports > Dashboard Widgets > Charts, clicking on "Guest OS Information" and "Generate Widget content now". Content generation fails with an error status.

Fixed to change chart type from pie 3D to pie for predefined reports. "Guest OS Information" widget content can now be successfully generated.

BZ#1106331

If a user assigned to any role other then super_admin logged into a CFME instance which did not have a provider configured yet, he would get the generic error message "The system has not been configured, please contact the administrator". The error message has been updated to a more descriptive one - "Logins not allowed, no providers are being managed yet. Please contact the administrator."

BZ#1077793

Connection issues between the CFME appliance and vCenter hosts caused closed connections to remain idle instead of terminating. This has been fixed and sessions now close correctly.

BZ#1102852

When attempting to use the Integration / VimApi / VMware_HotAdd_Disk method to add a disk to a VM in VMware, a ruby error was generated and disk wasnât being added.

The MiqVimVm#addDisk method was using the public accessor dsName2mo() when creating the ConfigSpec used to add a disk to the VM; causing the returned object to be wrapped in a MiqDrbReturn object. This caused the MiqDrbReturn object to be passed back to the client, since only top-level return objects should be wrapped in MiqDrbReturn. The client would then pass this unexpected object to the VMware VIM API, causing the failure.

Using the internal accessor dsName2mo_local() when acquiring sub-objects of the ConfigSpec, since this method does not wrap its returned value in a MiqDrbReturn object was the solution.

Also, fixed VMware service model methods for set_memory and add_disk; both method names were incorrectly set to an existing method name in a previous refactoring. This has fixed the issue and disk is now being added to a VM in Vmware without any error.

BZ#1025567

In the beta release of Cloud Forms Management Engine 5.3, when ordering a service that presented a dialog to the user, the Submit and Cancel buttons were not shown, only the paging controls were shown. This bug was fixed by ensuring that the

submit and cancel buttons were displayed as required, allowing users to order services as expected.

BZ#1045210

A code error caused custom button groups not to appear when viewing a Service. A code fix enables custom buttons to display correctly for Service and specific Service Templates on the Service summary screen.

BZ#1110964

In Infrastructure > Virtual Machines, clicking on timeline after selecting a tempate with timeline enabled threw an undefined method 'first_and_last_event' for nil:NilClass [vm_infra/tl_chooser] because find for VmInfra record was breaking MiqTemplate record.

Added a new method controller_to_model that can be used to pass in model to identify_record call which has fixed the issue and no error is displayed when clicked on template timeline.

BZ#1110971

Clicking on a service for a catalog item and setting ownership under configuration menu throws an error: undefined method id for nil:NilClass [service/x_button]

Unnecessary code was deleted where @record.id was being passed to locals while setting ownership on a service which has fixed the issue and no error is thrown.

BZ#1029654

Cloud relationships were not properly exposed to automate service models, resulting in missing key pairs for EC2 instances. A code update fixes the cloud relationships and key pairs for EC2 instances now populate the service models correctly.

BZ#1045215

Attempting to run the $evm.root['service'].inspect_all command caused an undefined method 'service_type' error, and the field service_type data failed to return. The service_type method and related code have been moved to the service_template model, and the command returns the expected data.

BZ#1068804

Changes in the Red Hat Enterprise Virtualization 3.3 API allowed for deployment of multiple payloads in one API call. However, CloudForms Management Engine could not save payloads to virtual machines because the code focused on a single payload per call

(3.2 and below). This fix adds an exception for Red Hat Enterprise Virtualization 3.3 that accommodates the API changes. CloudForms Management Engine now correctly interfaces with the Red Hat Enterprise Virtualization 3.3 API payload functions.

BZ#1069026

CloudForms Management Engine failed to pull network information from OpenStack instances with multiple network interfaces. This caused network information to not appear through automate methods. This fix modifies the provisioning code for OpenStack instances to allow for an array of network interfaces. Red Hat CloudForms now pulls network information for OpenStack instances with multiple interfaces.

BZ#1072113

When a user only had access to Services trees saw their VMs in a dashboard widget and clicked on them, they were directed to Infrastructure / Virtual Machines rather than Services / Workloads. A blank screen with no results displayed, and the production.log showed the following error message :

FATAL -- : Error caught: [RuntimeError] User is not allowed to access Virtual Machines, please contact your Administrator

This fix adds code to redirect users to the workloads explorer from the dashboard widget if they do not have access to accordions in the VM Infrastructure or VM Cloud explorers.

BZ#1086015

Selecting a VM under the Infrastructure tab took anywhere from 10-18 seconds due to slow database queries. Improvements were made in the VM selection code in the appliance. It is now possible to select VMs under the infrastructure tab without a delay.

Chapter 5. Known Bugs

BZ#1181872

The deployment functionality requires a specific version of the OpenShift Enterprise Portable Installer whilst in technical preview, you can download the required version of the installer from BZ#1181872 oo-installer.

BZ#1179967

The new AWS Frankfurt region requires an updated AWS-SDK library. However, this dependency was not discovered until very late in the testing process. As a result, the AWS-SDK library was not updated for the 5.3.2 release.

The 5.3.2 release includes an extra "Region" option for "Frankfurt (EU)" when adding an Amazon provider. This region should not be selected in the 5.3.2 release. If selected, the CFME appliance will indicate that the "Login failed due to bad username or password".

The current work arounds for this bug are:

1) Avoid using the Frankfurt (EU) region when adding a new Amazon provider.

Or,

2) Manually update the AWS-SDK gem on an appliance.

Option (2) is an advanced operation and is not recommended for typical users.

BZ#1179764

The Red Hat Network subscriber password in the OpenShift Enterprise Service Dialog is not encrypted.

BZ#1124515

Sometimes graphs display data for every other hour, and that causes the graphs not to link the data points with lines.

BZ#1114656

Adding a Red Hat Enterprise Virtualization 3.4 host with a large event history delays updates to the database from other hosts while the historical data is added to the database.

BZ#1100382

The power state displayed in the CFME appliance for Amazon EC2 instances is inconsistent with their actual state.

instances is inconsistent with their actual state.

BZ#1100830

If a VMware Customization Specification is created or modified in vCenter, Red Hat CloudForms does not automatically detect the change. To manually detect the change, run "Refresh Relationships and Power States" on the Infrastructure Provider then repeat the VM provision process.

BZ#1096244

The provision wizard only provides options for up to 4GB of memory and 8 CPU cores, which are inadequate for some virtual machine use cases.

BZ#1059788

A bug in the Customer Portal CSS causes lists in documentation specified to use letters (a-d) to be rendered with numbers (1-4) instead.

Chapter 6. Registering and Updating CloudForms Management Engine

The **Red Hat Updates** page enables you to edit customer information, register appliances, and update appliances. Editing customer information enables you to determine the registration point, User ID, and password. Red Hat CloudForms prompts you to update the Server URL when updating the registration point to a local Red Hat Satellite. The **Status of Available Servers** area provides options to refresh, register, check for updates, and to update. The Red Hat Updates page enables the Content Delivery Network (CDN) to assign the necessary update packages to the CloudForms Management Engine Server.

Using the **Check For Updates** task button, the CDN assigns any necessary update packages to your server and notifies you. Click **Update** and the CloudForms Management Engine packages install and update.

Three steps are required for updating the CloudForms Management Engine Appliance:

1. Register the CloudForms Management Engine for updates if it is not already registered.
2. Update the CloudForms Management Engine Appliance.
3. Update other system packages.

The following tools are used during the update process:

- **Yum** provides package installation, updates, and dependency checking.
- **Red Hat Subscription Manager** manages subscriptions and entitlements.
- **Red Hat Satellite Server** runs at customer locations providing local system registration and updates from inside the customer's firewall.

Important

The update worker synchronizes the VMDB with the status of available CloudForms Management Engine content every 12 hours.

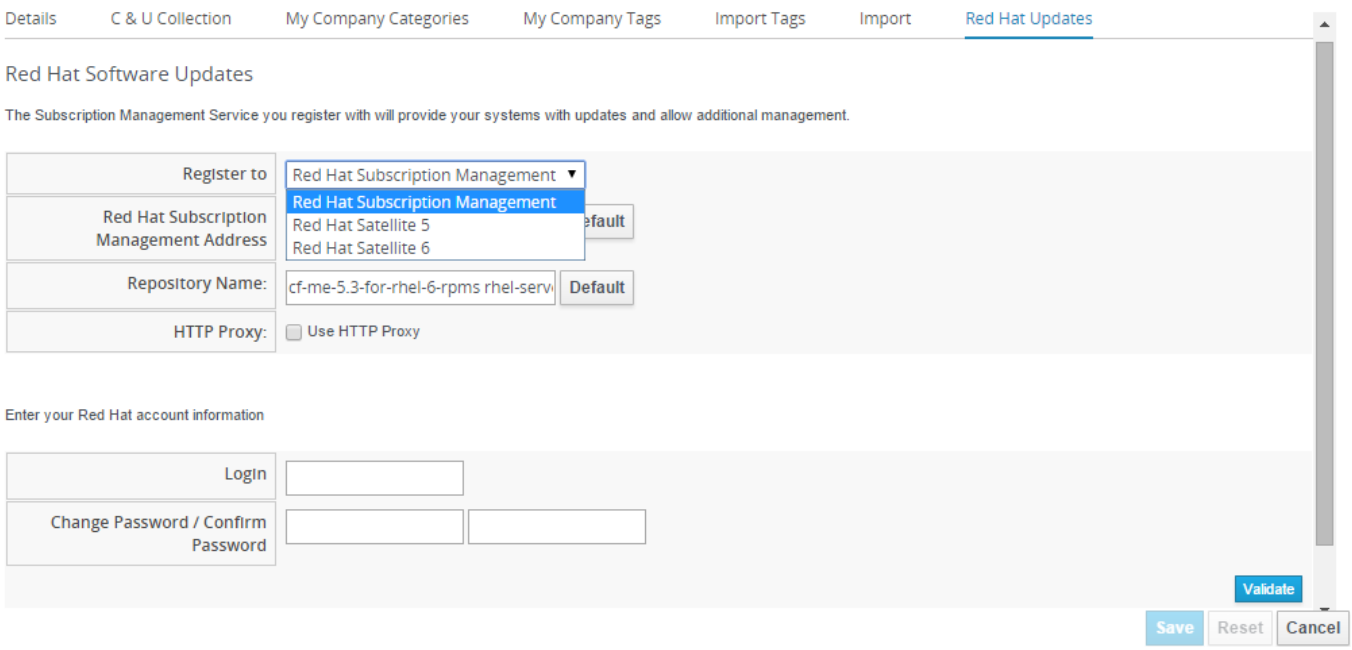
Note

Servers with the **RHN Mirror** role also act as a repository for other Appliances to pull CloudForms Management Engine packages updates.

6.1. Registering Appliances

The **Red Hat Updates** page enables you to register appliances. You will need the following to register:

- Your Red Hat Account login or Red Hat Network Satellite login
- A Red Hat subscription that covers your product



Procedure 6.1. To Register a CloudForms Management Engine Appliance

1. Navigate to **Configure** → **Configuration**. Select **Region** in the accordion menu and click the **Red Hat Updates** tab.
2. In **Red Hat Software Updates**, click **Edit Registration**.
3. You can register the CloudForms Management Engine Appliance using one of three available options:
   - Red Hat Subscription Management
   - Red Hat Satellite 5
   - Red Hat Satellite 6

   The Subscription Management Service you register with will provide your systems with updates and allow additional management.

   A. To register with Red Hat Subscription Management:

      a. In **Register to**, select **Red Hat Subscription Management**.

      b. Enter **Red Hat Subscription Management Address**. The default is **subscription.rhn.redhat.com**.

      c. Enter **Repository Name**. The default is **cf-me-5.3-for-rhel-6-rpms rhel-server-rhscl-6-rpms**.

      d. To use HTTP Proxy, select **Use HTTP Proxy**.

      e. Enter your Red Hat account information; click **Validate**.

      f. Click **Save**.

   B. To register with Red Hat Satellite 5:

      a. In **Register to**, select **Red Hat Satellite 5**.

      b. Enter **Red Hat Satellite 5 Address**. The default is **subscription.rhn.redhat.com**.

c. Enter **Repository Name**. The default is **rhel-x86_64-server-6-cf-me-3.1 rhel-x86_64-server-6-rhscl-1**.

d. To use HTTP Proxy, select **Use HTTP Proxy**.

e. Enter your Red Hat network Satellite account information.

f. Click **Save**.

C. To register with Red Hat Satellite 6:

a. In **Register to**, select **Red Hat Satellite 6**.

b. Enter **Red Hat Satellite 6 Address**. The default is **subscription.rhn.redhat.com**.

c. Enter **Repository Name**. The default is **cf-me-5.3-for-rhel-6-rpms rhel-server-rhscl-6-rpms**.

d. To use HTTP Proxy, select **Use HTTP Proxy**.

e. Enter your Red Hat network Satellite account information; click **Validate**.

f. Click **Save**.

6.2. Updating Appliances

The **Red Hat Updates** page enables you to check for updates and update registered appliances.

Procedure 6.2. To Update a CloudForms Management Engine Appliance

1. Navigate to **Configure** → **Configuration**. Select **Region** in the accordion menu and click the **Red Hat Updates** tab.
2. After registering, the following options are available in the **Appliance Updates** section of the **Red Hat Updates** tab:

Option	Use
Check for Updates	Checks for available updates using **yum**.
Register	Attempts to register the appliance if it is not already registered. CloudForms Management Engine subscribes to the **rhel-x86_64-server-6-cf-me-3** RHN channel for RHN registered appliances, and to the products designated by Red Hat product certification for **subscription-manager** registered appliances. The Red Hat Enterprise Linux channels are enabled by default on registration. In addition, CloudForms Management Engine checks for updates after registering.
Apply CFME Update	Applies updates to CloudForms Management Engine packages only. Specifically, this option runs the **yum -y update cfme-appliance** command. This command installs every package listed in the dependency tree if it is not already installed. If a specific version of a package is required, that version of the package is installed or upgraded. No other packages, such as PostgreSQL or Red Hat Enterprise Linux, are updated.

6.3. Updating the Appliance Operating System

6.3. Updating the Appliance Operating System

Users update CloudForms Management Engine packages through the web console under **Configure → Configuration → Settings → Region → Red Hat Updates**. However, updating the Appliance's operating system requires a manual update using the **yum** command.

Procedure 6.3. To Update an Appliance Operating System

1. Log in to the Appliance as the **root** user.
2. Run the **yum update** command and confirm any updates.

```
# yum update
...
Transaction Summary
================================================
Upgrade  52 Packages

Total download size: 34 M
Is this ok [y/N]: Y
```

Important

Scheduled downtime is required while updating system packages for the following reasons:

- Some updates may interrupt CloudForms Management Engine operations.
- Updates for the PostgreSQL database server suspend CloudForms Management Engine operations.
- System updates may require a reboot of the CloudForms Management Engine Appliance.

Chapter 7. Migrating to Red Hat CloudForms Management Engine 5.3

You can migrate directly from Red Hat CloudForms 3.0 (CFME 5.2) to Red Hat CloudForms 3.1 (CFME 5.3).

If you are using an earlier version of Red Hat CloudForms or ManageIQ EVM, you must first migrate to Red Hat CloudForms 3.0, then migrate to Red Hat CloudForms 3.1.

Migrating from ManageIQ EVM 4.x

See the Red Hat Knowledgebase article at https://access.redhat.com/articles/531953 for instructions on migrating from ManageIQ EVM 4.x to Red Hat CloudForms 3.0 (CFME 5.2).

Migrating from ManageIQ EVM 5.x or Red Hat CloudForms 2.0

See the Red Hat Knowledgebase article at https://access.redhat.com/articles/531963 for instructions on migrating from ManageIQ EVM 5.x or Red Hat CloudForms 2.x to Red Hat CloudForms 3.0 (CFME 5.2).

Migrating from Red Hat CloudForms 3.0

See the Red Hat Knowledgebase article at https://access.redhat.com/articles/1255653 for instructions on migrating from Red Hat CloudForms 3.0 (CFME 5.2.x) to Red Hat CloudForms 3.1 (CFME 5.3.1).

Chapter 8. Enabling Public AMIs from Amazon EC2

Users can alter the Main Configuration File to enable public AMIs from Amazon EC2 using the following procedure:

Procedure 8.1. To Enable Public AMIs

1. Open your Appliance.
2. Navigate to **Configure** → **Configuration** → **Advanced**.
3. Choose from the dropdown which **Configuration File** to edit. If not already automatically selected, choose **EVM Server Main Configuration**.
4. Search for the **get_public_images** parameter:

```
ems_refresh:
  capture_vm_created_on_date: false
  ec2:
    get_private_images: true
    get_shared_images: true
    get_public_images: false
    ignore_terminated_instances: true
```

5. To show public images, set the parameter to **get_public_images: true**. To remove public images from view again, set the parameter to **get_public_images: false**.

Result:

Public images are viewable in CloudForms Management Engine.

Note

For information on other parameters, see *Configuration Parameters* in the *Settings and Operations Guide*.

Revision History

Revision 1.4-0 **Wed Apr 29 2015** **CloudForms Docs Team**

Red Hat CloudForms 3.1.4 release
Updated topic - Registering Appliances

Revision 1.3-1 **Fri Mar 27 2015** **CloudForms Docs Team**

BZ#1206402 - Updated the support matrix

Revision 1.3-0 **Tue Feb 3 2015** **CloudForms Docs Team**

Update product name to Red Hat CloudForms

Revision 1.2-2 **Wed Jan 14 2015** **CloudForms Docs Team**

Added two bugs to the list of known bugs, and a description of the OpenShift installer.

Revision 1.2-1 **Wed Nov 19 2014** **CloudForms Docs Team**

BZ#1165256 - Update article link for migrating from CFME 5.2.x to CFME 5.3.1

Revision 1.2-0 **Mon Nov 17 2014** **CloudForms Docs Team**

Final packages for Red Hat CloudForms 3.1.1
BZ#1164343 - Update Platform Support Matrix

Revision 1.1-1 **Mon Oct 27 2014** **CloudForms Docs Team**

Added supported version number for Microsoft SCVMM 2012 R2

Revision 1.1-0 **Wed Oct 22 2014** **CloudForms Docs Team**

Red Hat CloudForms 3.1 (CFME 5.3) asynchronous documentation release.
BZ#1154700 - Updated platform support matrix

Revision 1.0-0 **Tue Sep 30 2014** **CloudForms Docs Team**

Initial book creation.